

Attachment 6

Monitoring, Assessment and Performance Measures

Following are the performance measures for the projects included in the Proposal.

This Attachment 6 includes the following Sections:

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ATTACHMENT 6
MONITORING, ASSESSMENT, AND PERFORMANCE MEASURES
UPPER SANTA MARGARITA WATWERSHED PLANNING REGION
IRWM PROP 84 ROUND 1 IMPLEMENTATION PROPOSAL

A sample of the information that will be incorporated in each monitoring plan is provided in this attachment. The following Project Performance Measures Tables and narratives provide information regarding each proposed project.

Section 1

Project 1. VAIL LAKE STABILIZATION AND CONJUNCTIVE USE PROJECT – Rancho California Water District

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
1. Increase seasonal water and conjunctive use storage in Vail Lake.	Increase local storage and enhance reliability of local supplies.	Amount of imported raw (untreated) water delivered through EM-21 into Vail Lake; determine desired level of untreated MWD water delivery.	Increased stored water and water levels in Vail Lake.	Measure water deliveries at EM-21 and natural flows into lake; measure lake water levels using SCADA system; use VLTM&PS Operations Plan for proper operation and control.	Increase seasonal storage and conjunctive use by conveying 4,521 AFY of additional imported untreated MWD water into Vail Lake.
2. Additional water supplies to agricultural water users to enhance sustainability of agriculture.	Store additional water in Vail Lake for future water deliveries to agricultural water users.	Offset/reduce potable water purchases in the RCWD service area for the benefit of all water users; increased agricultural water use to sustain ag economy.	Reduced water purchase costs, reduced potable water purchases, increased groundwater pumping in drought period, and increased agricultural water use.	Track water purchases, groundwater pumping, and agricultural water use.	Offset potable water use by agricultural water users by conveying 4,521 AFY additional imported untreated MWD water into Vail Lake and into VDC Recharge Ponds.
3. Increase groundwater replenishment and lower cost of water.	Replenish groundwater levels in Pauba Groundwater Basin.	Amount of imported raw water and groundwater replenishment water ordered for EM-21 turnout.	Stored water for one year to access lower water replenishment cost; increased groundwater pumping in drought periods; increased groundwater levels.	Measure rate of replenishment through VDC Recharge Ponds; measure groundwater levels and amount pumped.	Increase groundwater replenishment by conveying 4,521 AFY of additional imported untreated MWD water into Vail Lake and into VDC Recharge Ponds.

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Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
4. Prevent the spread of Quagga Mussel infestation in Vail Lake.	Preserve Vail Lake for fishing and the aquatic environment, and save millions of dollars in water supply and electric power generating equipment maintenance.	Ongoing sampling of substrate and plankton tow.	Identify presence or absence of veliger, and growth of mussels in specific locations; identify and quantify veliger population volumes, if any.	Use of coupon sampling equipment for substrate monitoring; submit samples to qualified laboratory to identify and quantify veliger population volumes, if any.	100% success in keeping Vail Lake free from the infestation of aquatic invasive species, particularly Quagga Mussels.
5. Successful Native Vegetation Restoration.	Meet requirements of US Army Corps of Engineers Section 404 Permit, Compensatory Mitigation Plan, RWQCB Mitigation Measures	Monitoring reports, annual assessments, visual assessments and quantitative sampling.	Identify exotic weed eradication, vegetative cover, and seed germination, based on tree/shrub height and plantings survivorship; compare to pre-construction site conditions.	Develop as-built drawings; conduct initial monitoring, first-year monitoring and quantitative assessment, and prepare reports.	Success of exotic weed eradication; plant survival and vegetative cover; seed germination; and low weeds, based on tree and shrub height and container plantings survivorship.

Vail Lake Transmission Main and Pump Station (VLTM&PS): With the VLTM&PS Project the Rancho California Water District (RCWD/District) will take advantage of additional imported water during wet years for storage and use during dry years, allowing for seasonal storage and conjunctive use storage. The Project will decrease dependency on imported potable water throughout the RCWD service area, increase groundwater recharge, and enhance agriculture in the region.

The Project facilities will convey 4,521 AFY of imported untreated MWD water for storage in Vail Lake for future delivery to agricultural users and subsequent groundwater recharge in the Upper Valle De Los Caballos (VDC) Recharge Ponds. The District will measure imported water deliveries from Metropolitan Water District of Southern California (MWD) through the EM-21 turnout into Vail Lake, from existing natural flows into the lake, and into the VDC Recharge Ponds. Water levels in Vail Lake will be monitored through a SCADA system for increased storage and availability for conjunctive use. The rate of groundwater replenishment will be monitored by the District, as well as groundwater levels in coordination with the level of groundwater pumping. Additionally, water purchases and costs, along with the level of agricultural water use will be tracked. All of this information, along with data included in the District's Groundwater Audit and Recommended Groundwater Production Report, will be analyzed and compared to pre-project conditions in Vail Lake to determine if the project goals are being met.

The District will follow the VLTM&PS Operations Plan for proper operation of the facilities, including the Quagga Mussel Control Facilities (Quagga Mussel Control and Action Plan discussed below). The Operations Plan will allow the District to closely monitor facility conditions for optimal performance.

Quagga Mussel Control Facilities: The RCWD Dreissena Mussel Response and Control Action Plan (Action Plan) has been developed to help prevent the spread of aquatic invasive species, particularly the quagga mussels into Vail Lake and the Santa Margarita watershed. The Action Plan details management actions of the District and activities currently underway or planned for the near term implementation. The action items presented are intended to meet the requirements of California State Assembly Bill 1683 and other related state and federal regulations. The Action Plan will be revised as needed as more information is obtained concerning the control and/or eradication of quagga mussels.

California Fish and Game has established a priority of reservoir sampling within the state as follows:

1. Water bodies supplied by Colorado River Aqueduct water.
2. Water bodies allowing private boats or recreational fishing.
3. All other waterways.

The methods of monitoring include ongoing substrate and plankton tow sampling. These methods, used in conjunction should help establish the presence or absence of veliger and adult mussels. Substrate monitoring utilizing coupon sampling equipment is currently being conducted at Vail Dam. Additional substrate monitoring utilizing a variation of the coupon sampler is being conducted in the Santa Margarita River. Sampling is submitted to a qualified laboratory in order to identify and quantify veliger population volumes. Coupon sampling is an effective, low-cost way to assess the presence and growth of mussels in specific locations. Quagga mussels are able to colonize both hard and soft substrates and can be found at depths between 0 to 400 feet. Once attached the juveniles feel like sandpaper on smooth surfaces. For these reasons, coupons are inspected monthly for the presence of settled larvae by visual and physical means.

In addition to the chlorine/dechlorination facilities, the District has an active and detailed watercraft inspection program to prevent the spread of aquatic invasive species, particularly the quagga mussels on trailered watercraft. The inspection program preserves Vail Lake for fishing and the aquatic environment, and saves millions of dollars in water supply and electric power generating equipment maintenance.

Native Vegetation Restoration: The Vail Lake native vegetation restoration includes an initial monitoring during restoration activities, first year monitoring and two years of following maintenance. Initial monitoring will include biological monitoring of the mitigation site during all phases of site preparation, installation of plant and seed material, and plant warranty period maintenance to the extent necessary to ensure compliance with the Compensatory Mitigation Plan (CMP). Restoration activities performed during each day of monitoring will be documented and included in a report to RCWD. The first year of mitigation monitoring will be conducted at least once per month after site preparation, installation of plant and seed material, and plant warranty period. Monitoring during the first year will include:

- » Success of exotic weed eradication;
- » Plant survival and vegetative cover;
- » Seed germination; and
- » Presence of density of weeds.

Additionally, the first year monitoring will include one annual quantitative assessment. This will include a visual assessment and quantitative (transect data collection) sampling within the mitigation site. This sampling will include assessments of cover (native and nonnative), as well as measurements of the tree and shrub height and container plantings survivorship. All plant and animal species observed during the quantitative assessment, as well as ground and aerial photographs will be recorded and included in the annual report. The annual report will describe restoration activities and information regarding exotic vegetation removal.

In addition and in accordance with Mitigation Measure RWQCB-39 in the CMP, a *California Rapid Assessment Method for Wetlands and Riparian Areas* (CRAM) analysis will be conducted of the six wetland crossing locations at the project site during the mitigation monitoring period. The CRAM analysis will include the following:

- » Background information about the management history of the wetland;
- » Classify the wetland according to the CRAM guidance;
- » Wetland size;
- » Appropriate season for the field assessment;
- » Boundaries and estimate the size of the assessment area;
- » Assessment of stressors and on-site conditions;
- » Complete CRAM assessment scores and QA/QC procedures; and
- » Upload CRAM results into the regional and statewide information system.

Subsequently, the performance of the native vegetation restoration during the following two-year maintenance time will determine the level of restoration success and the need for work beyond the first two years. Performance monitoring, assessment and reporting will be conducted by a highly qualified firm that is separate from the native revegetation restoration installation firm.

Section 2 Project 2. AGRICULTURAL IRRIGATION EFFICIENCY PROGRAM – Rancho California Water District

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
1. Develop accurate water budgets for agricultural water users.	Site-specific water budgets.	GIS maps for each property analyzed.	Irrigated acreage data and water budgets for each property analyzed.	GIS imagery software and infrared data used for determining irrigated acreage and crop type for agricultural properties within RCWD's service area.	1,724 agricultural sites
2. Identify and target agricultural sites where irrigation system retrofits could result in water supply/quality benefits.	Compare site-specific water budgets to actual site usage to determine sites that could benefit from Project and could help to achieve water supply benefits.	List of agricultural sites.	Property-specific comparisons between newly developed water budget and history of usage.	Model to compare new water budget to history of water usage.	Approximately 200 agricultural sites or 2,000 planted acres.
3. Recommendations for system retrofits.	Determine pre-retrofit distribution uniformity for each participating site; develop a specific plan for retrofitting irrigation system for enhanced efficiency.	Pre-retrofit irrigation system audit reports.	Property-specific water requirements based on initial distribution uniformity tests.	Perform distribution uniformity tests on irrigation systems selected for review; evaluate and quantify irrigation system efficiency and make recommended actions for system retrofits.	Approximately 200 agricultural sites or 2,000 planted acres.
4. Provide financial incentives for irrigation system retrofits conducted at targeted sites.	Cost-share the costs required for performing the irrigation system retrofits with agricultural site owners.	Incentive payments.	Equipment receipts, invoices, project application materials.	Provide incentive payments in the form of water bill credits to project participants.	Cost-share with 200 agricultural site owners on 50% of site retrofit costs.

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Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
5. Evaluate irrigation system efficiency at each site following system retrofit.	Determine post-retrofit distribution uniformity for each participating site, and verify installation of recommended equipment.	Post- retrofit irrigation system audit reports.	Property-specific water requirements based on post-retrofit distribution uniformity tests.	Perform distribution uniformity test on irrigation systems retrofitted.	Approximately 200 agricultural sites or 2,000 planted acres.
6. Quantify water supply benefits.	Estimate water savings and subsequent energy savings.	Reports providing water supply benefits analysis.	Property-specific comparisons of pre- and post-retrofit water requirements, usage tracking to verify usage within budget, and return on investment analysis.	Model to compare pre- and post-retrofit water requirements.	Reduce site water requirements by 1,067 acre feet.

Agricultural Irrigation Efficiency Program: To develop baseline water requirements for 1,724 farming operations, water budgets will be developed using accurate irrigated area and crop type data gathered from GIS imagery and infrared data. These accurate water budgets will be compared to each of the 1,724 site's historical water consumption data, and sites showing consumption that exceeds the newly developed water budget will be targeted for Program participation (i.e. water use efficiency improvements). The targeted for sites for which consumption exceeds the new water budget by the largest volume of water will be prioritized.

Irrigation systems at the targeted sites chosen for Program participation will be tested for distribution uniformity (i.e. hydraulic efficiency) by an auditing contractor and through conversations with the site property owner, the auditor will gain an understanding of how irrigation events are scheduled. The auditor will then produce a report that includes recommendations for site retrofits that will result in improved distribution uniformity and irrigation scheduling efficiency. Recommendations for site retrofits improvement will include specific equipment lists, and will be submitted to the lead agency. These reports will include:

- a. General description of the site, crop, and irrigation system.
- b. A description of the soil types found in the tested areas.
- c. A summary of audit findings including date of audit.
- d. Data from a single event distribution uniformity test performed to industry standards.
- e. Flow and pressure data collected during the evaluation.
- f. Observations and recommendations for improving distribution uniformity, overall system performance, and reducing water usage.
- g. Specific recommendations of capital improvements that improve agricultural irrigation system efficiencies.
- h. Estimated water savings from system improvements.
- i. Recommended irrigation schedule/water budget.

The lead agency will accompany the contractor during some of the site visits for quality control purposes, and will review each of the recommendations for site retrofits to verify reasonableness and cost effectiveness. After the reports are produced, the site property owner will submit application materials to include data from the report such as project costs and projected benefits. If it is determined that what is being proposed is cost effective in terms of water supply benefits and energy savings, the site property owner will be sent an approval letter listing the equipment and dollar amounts approved for the retrofit and giving them the go-ahead for performing the retrofit.

When the retrofit is complete, the audit contractor will perform a post-retrofit site audit. During this audit, the contractor will document irrigation system improvements, verify the installation of each piece of equipment approved by the lead agency, and measure current distribution uniformity. The post-retrofit audit report will include the following at a minimum:

- a. A summary of the audit findings including date of audit.
- b. Data from a single event distribution uniformity test performed to industry standards.
- c. Flow and pressure data collected during the evaluation.
- d. Revised recommended irrigation schedule/water budget based on current distribution uniformity.
- e. Estimated water supply benefits calculation based on current distribution uniformity compared to distribution uniformity documented in the pre-retrofit audit.

Following the submission of the post-retrofit site audit, the site property owner will submit to the lead agency receipts and/or invoices for all of the equipment verified as being installed as part of the retrofit. Once the approved equipment costs have been determined by the lead agency, a credit for 50% of the approved equipment costs will be issued to the site property owner's water bill.

Data generated from irrigation site audits will be input into a model (Excel spreadsheet) for analysis, monitoring, and measurement of performance purposes. The model will include the following data at a minimum:

Site Identifier	Crop Type	Irrigated Acres	Project Cost	Plant Water Requirement (AF)	Pre-Retrofit Distribution Uniformity	Site Water Requirement (AF)	Post-Retrofit Distribution Uniformity	Site Water Requirement (AF)	Water Supply Benefits (AF)	Energy Savings (kWh)	Cost of Water Supply Benefits	Cost for Energy Savings	
1256	Avocado	10	\$5,000	37.00	0.63	58.73	0.85	43.53	15.20	22801.12	\$ 328.93	\$ 0.22	
2356	Citrus	20	\$2,000	63.80	0.52	122.69	0.85	75.06	47.63	71450.23	\$ 41.99	\$ 0.03	
1247	Citrus	50	\$9,000	159.50	0.77	207.14	0.85	187.65	19.50	29243.70	\$ 461.64	\$ 0.31	
2365	Avocado	20	\$5,000	74.00	0.65	113.85	0.85	87.06	26.79	40181.00	\$ 186.66	\$ 0.12	
1458	Winegrape	10	\$1,000	21.00	0.74	28.38	0.85	24.71	3.67	5508.74	\$ 272.29	\$ 0.18	
										112.79	169184.78	258.30	0.17
										TOTAL	AVERAGE		

The following calculations will be used to quantify water supply benefits and energy savings:

Water Supply Benefits (acre feet per year [AFY])

$$WSB = WR_{pre} - WR_{post}$$

where, WSB = water supply benefits (AFY)

WR_{pre} = site water requirement in acre feet prior to irrigation system retrofit

WR_{post} = site water requirement in acre feet following to irrigation system retrofit

and, site water requirement in acre feet = ((ETo x Kc) / DU) / 12 X IA

where, ETo = evapotranspiration (in inches)

Kc = crop coefficient (as % of ETo)

IA = irrigated acreage

DU = irrigation system distribution uniformity (%)

12 = number of acre inches in an acre foot

Estimated Energy Savings (kWh/yr)

$$ES = WSB \times 1500$$

where, WSB = water supply benefits in acre feet (from previous calculation)

1500 = kWh consumed per acre foot pumped

Section 3 Project 3. WR-34 HYDROELECTRIC POWER GENERATION PROJECT – Rancho California Water District

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
1. Create a reliable new, clean electrical energy source.	Additional revenue to RCWD to offset costs, stabilize water rates, and enhance water reliability for the Santa Margarita River.	Level of revenues received from sale of energy to SCE.	Increased revenues; Reduced cost of O&M from offset from energy revenues.	Financial reporting to identify energy revenue and O&M cost offsets; analysis of impacts on water rates and enhanced water reliability.	Produce average annual energy generation of 1,281 MWh/year, resulting in \$166,000/year of revenues.
2. Water supply reliability to meet the water discharge requirements into the Santa Margarita River as required by the Santa Margarita River Cooperative Water Resource Management Agreement.	Reliable delivery of water into the Santa Margarita River in accordance with the Santa Margarita River Cooperative Water Resource Management Agreement.	Measured water flow at WR-34 turnout, along with measured live stream discharge flows from Vail Lake.	Flow of water measured against the required quantities in the Santa Margarita River.	Measure water flow at WR-34 turnout; measure water flow from live stream discharge at Vail Lake.	Reliable delivery of water into the Santa Margarita River in accordance with the Santa Margarita River Cooperative Water Resource Management Agreement.
3. Groundwater replenishment and environmental and ecological enhancements.	Ensure groundwater replenishment and environmental and ecological enhancement in a critical natural waterway – the Santa Margarita River.	Groundwater levels and thriving environmental along the critical natural waterway.	Increased or steady groundwater levels in basin; health of natural environment in Santa Margarita River.	Measure groundwater levels in basin; monitor and compare pre-project environment condition to post-project condition.	Increased/steady groundwater levels and sustained environmental health along the Santa Margarita River.
4. Stabilize RCWD water rates.	Assist in minimizing water rates impacts from District operations.	Reduced O&M costs.	Reduced cost of O&M from offset from energy revenues.	Financial reporting to identify energy revenue and analysis of impacts on water rates.	Stabilized water rates.
5. Sustainable water rates for agricultural users.	Assist in minimizing agricultural water rates impacts from District operations for sustainable agriculture.	Reduced O&M costs.	Reduced cost of O&M from offset from energy revenues.	Financial reporting to identify energy revenue and analysis of impacts on agricultural water rates.	Sustained agricultural water rates.

WR-34 Hydroelectric Power Generation Project: The Rancho California Water District (District/RCWD) will operate and maintain the WR-34 Hydroelectric Power Generation facility in accordance with the Facility Operations Plan that will be developed upon completion of construction. The Operations Plan will provide for the optimal performance to produce an average annual energy generation of 1,291 MWh resulting in approximately \$166,000 annually.

RCWD staff will ensure and monitor the Project's participation in the Southern California Edison (SCE) California Renewable Energy Small Tariff (CREST) Program and the Interconnection Facilities Financing and Ownership Agreement. This will allow SCE to purchase the energy and generate revenues for the District.

RCWD staff will ensure and monitor water flows at the optimal flow rates to operate the power generation facility appropriately and provide water into the Santa Margarita River in accordance with the Santa Margarita River Cooperative Resource Management Agreement (Agreement) between the RCWD and the United States on behalf of Camp Pendleton Marine Corps Base. The historical flow rate from WR-34 turnout typically ranges from 4 to 10 cfs, 2,896 AFY to 7,240 AFY, respectively.

The environmental and ecological health of the Santa Margarita River is currently monitored through implementation of the Santa Margarita River Monitoring Plan. The Monitoring Plan provides a quantitative assessment of the key ecological processes and ecological integrity of the river system, determines the potential effects of stressors on the system, and evaluates the success of stressor abatement strategies and allows adaptive management to modify and refine strategies. The plan was initiated in response to the water discharges in the river as part of the Agreement. Maintaining base flows and other physical, hydrological, and biological processes and conditions, including river groundwater, is critical to maintaining the high resource values of the river system. The monitoring is design to measure a number of metrics relating to these processes and conditions so that resource values can be assessed and managed at the watershed scale to ensure their long-term conservation. The Monitoring Plan will continue and take into consideration the addition of the hydroelectric power generation facility along the river, assessing any the impacts the facility may have on the river's environment and ecological integrity.

RCWD staff will monitor energy revenues and conduct analysis on the effect on water rates in all customer classes. Staff will analyze how the revenue from the sale of reliable electrical energy reduces the overall O&M costs to the project and how this assists in stabilizing water rates by reducing the net cost of water to the Project.

Section 4. WATER QUALITY ENHANCEMENTS IN RIVERSIDE COUNTY – Riverside County Flood Control and Water Conservation District

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
1. Identify retrofit opportunities in the Santa Margarita Watershed to facilitate improvement of water quality and conservation.	GIS Watershed Map/Guidance identifying desired retrofit projects.	<ul style="list-style-type: none"> List of researched sources. Prioritization list Map/Guidance document. 	Submittal of GIS Watershed Map/Guidance Document to the San Diego Regional Water Quality Control Board.	<ul style="list-style-type: none"> Documentation of development progress and contract expenditures. Completion of a GIS Watershed Map/Guidance. 	Submittal of GIS Watershed Map/Guidance Document to the San Diego Regional Water Quality Control Board.
2. Educate homeowners associations (HOAs) on ways to reduce water use and stormwater runoff.	Retrofit of their properties and facilities to result in a reduced water use and stormwater runoff.	<ul style="list-style-type: none"> List of HOAs contacted. Results of post-presentation survey. 	Results of post-presentation survey (approximately 6 months after presentation) detailing number of HOAs who have implemented changes since the presentation.	Surveys of public participation.	Participation by HOAs as well as individual homeowners who also attend the presentation and receive handout materials. Modified behavior from 15-40 percent of participants is the target.
3. Identify and facilitate opportunities to reduce negative hyromodification impacts and restore and rehabilitate receiving waters in the Santa Margarita Watershed.	Hydromodification Management Plan (HMP) and suite of BMPs to select from with easily managed tools for BMP sizing.	<ul style="list-style-type: none"> List of literature references. Identification of restoration and rehabilitation opportunities. 	Submittal of HMP to the San Diego Regional Water Quality Control Board.	<ul style="list-style-type: none"> Documentation of development progress and contract expenditures. Completion of the HMP. 	San Diego Regional Water Quality Control Board's determination of adequacy for the Final HMP.

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Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
4. Education: Inform the public and municipal staff on the HMP and BMP sizing tools.	Trained individuals in both the public and municipal sector regarding the HMP and BMP sizing tools.	Development of training workshops.	<ul style="list-style-type: none"> • Incorporation of HMP guidelines and BMP selection and sizing criteria in training materials. • Scheduled training workshops. 	Documentation of training workshops.	Facilitate at least two training events within 90 days of San Diego Regional Water Quality Control Board approval for the Final HMP.

Implementing Nutrient Management in the Santa Margarita River Watershed: Quantification and qualification of performance for this project will include:

1. Documentation of key progress points such as consultant selection, document drafts, and completion of key components such as guidance documents, GIS exhibits and maps in grant reports.
2. Surveys of HOAs that are solicited as part of the water use reduction component of the project to evaluate outreach effectiveness and document activity in grant reports.
3. Documentation of training and workshops conducted to educate public agency staff, developers and/or other interested stakeholders about the proposed plans in grant reports and solicit input.
4. Documentation that project deliverables (retrofit evaluation and hydromodification management plan) are addressed in study and management plan submittals to the San Diego RWQCB by NPDES MS4 Permittees so as to facilitate compliance with Stormwater Permit requirements contained in Board Order R9-2010-0033.

Section 5

Project 5. IMPLEMENTING NUTRIENT MANAGEMENT IN THE SANTA MARGARITA RIVER WATERSHED – PHASE II, ADDITIONAL MONITORING – Riverside County Flood Control and Water Conservation District

Project Goals	Desired Outcomes	Output Indicators	Outcome Indicators	Measurement Tools and Methods	Targets
1. Increase stakeholder involvement and stewardship	Achieve consensus on recommending water quality objectives for nutrients in the Santa Margarita Estuary	<ul style="list-style-type: none"> List of Stakeholders Stakeholder meeting notes and No. of attendees 	<ul style="list-style-type: none"> Increase in general knowledge of the effects of nutrients in Santa Margarita Lagoon 	<ul style="list-style-type: none"> Number of stakeholder meetings Diversity of the list of stakeholders 	Broad acceptance by stakeholders of the proposed water quality objectives (WQOs).
2. Further the scientific and technical foundation of water quality management	Demonstrate an innovative approach to establishing nutrient WQOs by using open source models, publishing results in peer-reviewed scientific literature, and making presentations to stakeholders, thus improving the technical foundation of water management.	<ul style="list-style-type: none"> List of Stakeholders Stakeholder meeting notes and number of attendees 	Successful completion of Modeling Report	<ul style="list-style-type: none"> Number of stakeholder meetings Diversity of the list of stakeholders 	Use of proposed WQOs in San Diego Regional Water Quality Control Board's staff report for consideration of a Basin Plan Amendment for a Site Specific WQO for nutrients to Santa Margarita Lagoon
3. Develop and maintain a diverse mix of water resources	In Phase II of the project WQOs for the Santa Margarita River will be developed to protect beneficial uses and depending on the quality of recycled water may allow discharge of recycled water to river.	<ul style="list-style-type: none"> List of Stakeholders Stakeholder meeting notes and number of attendees 	Successful completion of Modeling Report	<ul style="list-style-type: none"> Number of stakeholder meetings Diversity of the list of stakeholders 	Potential benefit of increasing use of recycled water would not be realized in Phase II of the project in 5 to 7 years after adoption of the Santa Margarita River (SMR) nutrient WQOs.
4. Protect and maintain habitat and open space	Improve understanding of nutrient processes in SMR River watershed to protect beneficial uses.	Number of total sites sampled	Percent sample coverage of study area	Monitoring & Special Studies Report	Use results of Project studies to develop a site-specific nutrient WQOs for the SMR watershed in Phase II

Implementing Nutrient Management in the Santa Margarita River Watershed: The State Water Quality Control Board's Surface Water Ambient Monitoring Plan protocols will be used to conduct field studies. Modeling efforts will use open source codes and collaborate with the Stakeholder Advisory Group which will include staff from the San Diego Regional Water Quality Control Board.

Development of site-specific water quality objectives will aid in the development of nutrient Total Maximum Daily Loads (TMDLs) for nutrients in the Santa Margarita Watershed. Development of the nutrient TMDLs will provide targets for the reduction of nutrients to the watershed. These targets may require implementation of source control or other best management practices to reduce nutrients in the river and estuary to protect beneficial uses.